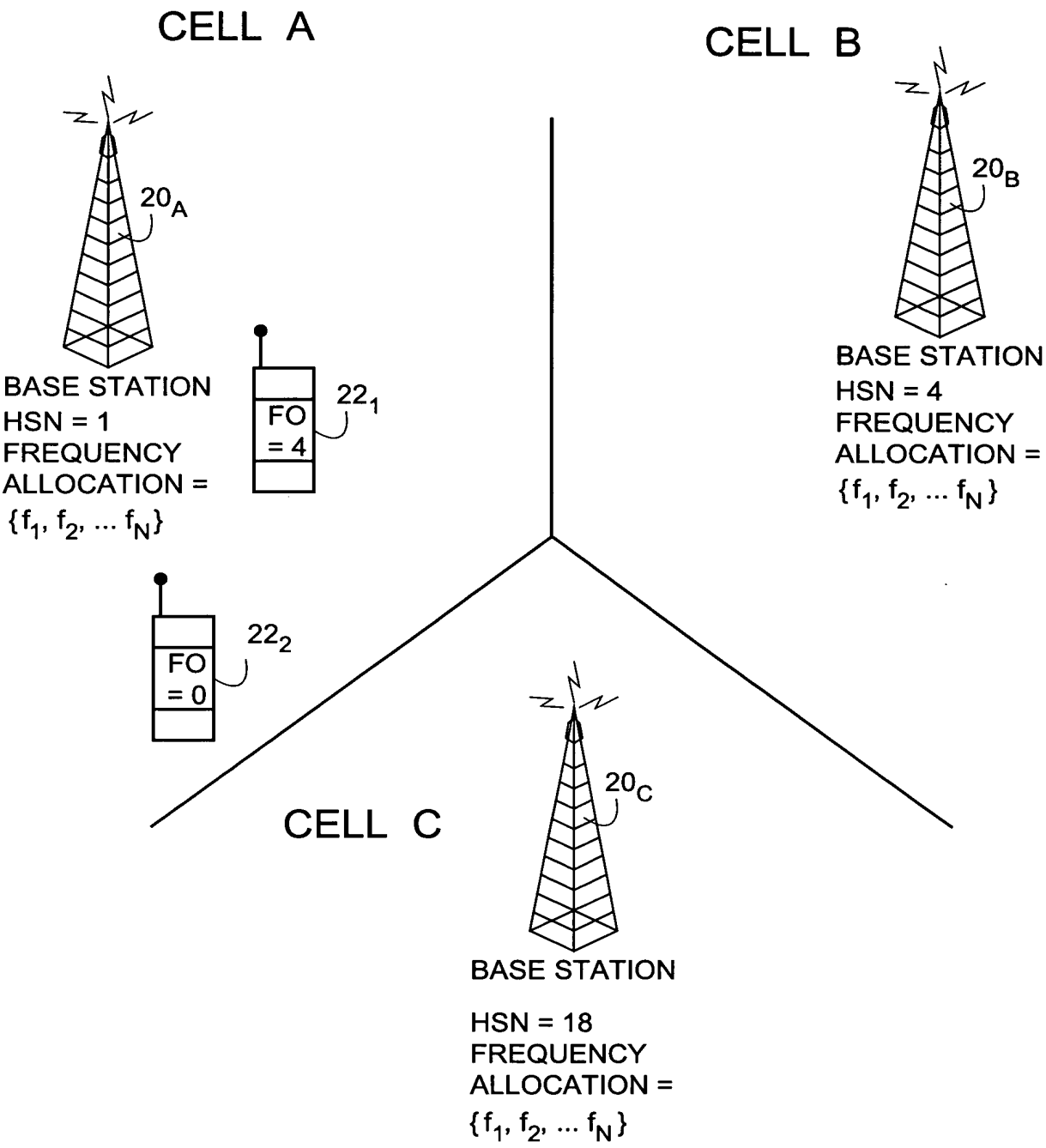

CELL A
CELL B
CELL C
20_A
20_B
20_C
BASE STATION
HSN = 1
FREQUENCY
ALLOCATION =
$\{f_1, f_2, \ldots f_N\}$
22_1
FO
= 4
22_2
FO
= 0
BASE STATION
HSN = 4
FREQUENCY
ALLOCATION =
$\{f_1, f_2, \ldots f_N\}$
BASE STATION
HSN = 18
FREQUENCY
ALLOCATION =
$\{f_1, f_2, \ldots f_N\}$

Fig. 1

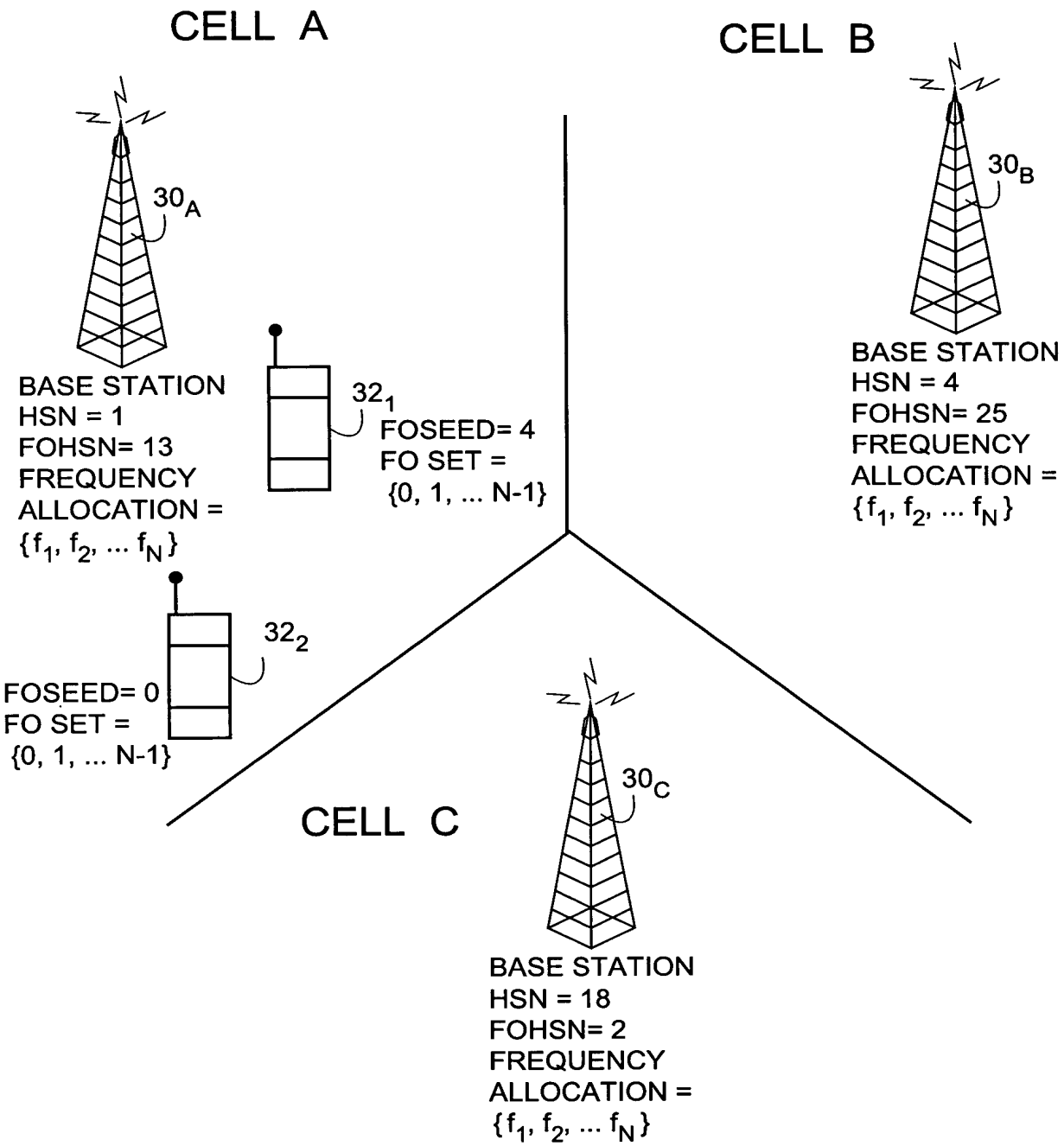

CELL A
CELL B
CELL C
30_A
30_B
30_C
BASE STATION
HSN = 1
FOHSN= 13
FREQUENCY
ALLOCATION =
{f_1, f_2, ... f_N}
32_1
FOSEED= 4
FO SET =
{0, 1, ... N-1}
32_2
FOSEED= 0
FO SET =
{0, 1, ... N-1}
BASE STATION
HSN = 4
FOHSN= 25
FREQUENCY
ALLOCATION =
{f_1, f_2, ... f_N}
BASE STATION
HSN = 18
FOHSN= 2
FREQUENCY
ALLOCATION =
{f_1, f_2, ... f_N}

Fig. 2

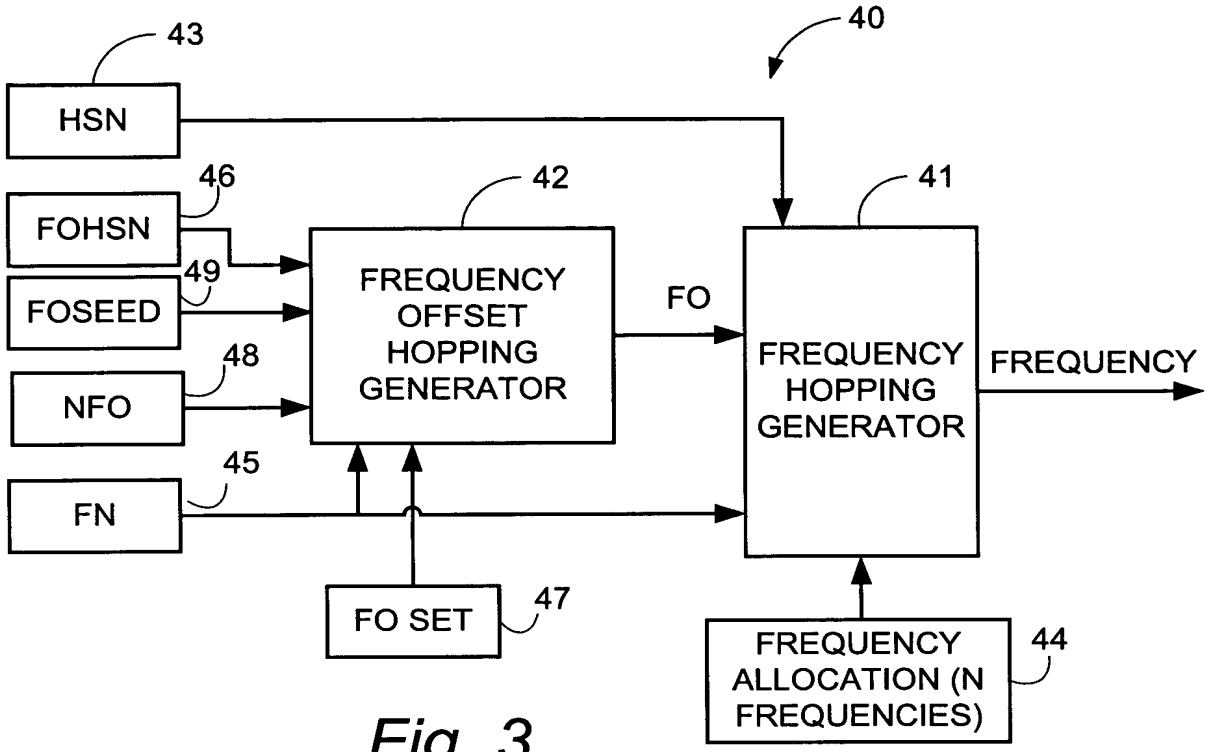

43
40
HSN
46
42
41
FOHSN
49
FOSEED
FREQUENCY OFFSET HOPPING GENERATOR
FO
FREQUENCY HOPPING GENERATOR
FREQUENCY
48
NFO
45
FN
FO SET
47
FREQUENCY ALLOCATION (N FREQUENCIES)
44

Fig. 3

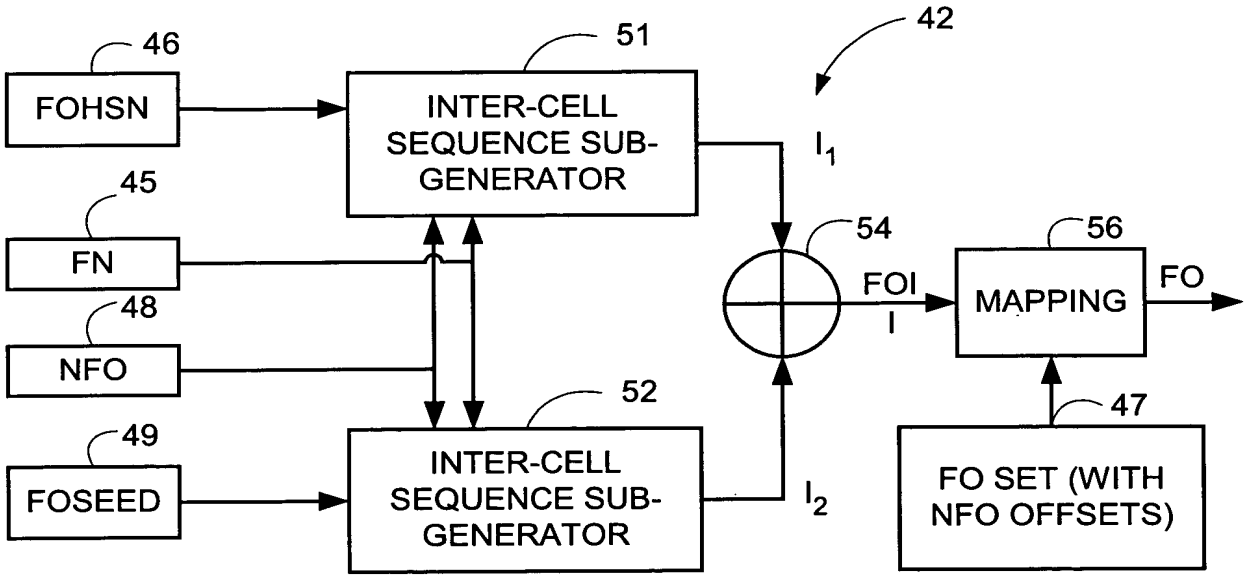

42
46
51
FOHSN
INTER-CELL SEQUENCE SUB-GENERATOR
I_1
45
54
56
FN
FOI
I
MAPPING
FO
48
NFO
52
47
49
INTER-CELL SEQUENCE SUB-GENERATOR
I_2
FOSEED
FO SET (WITH NFO OFFSETS)

Fig. 4

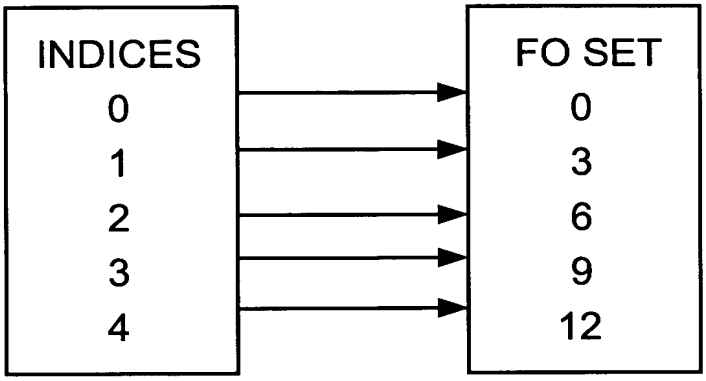


Fig. 5

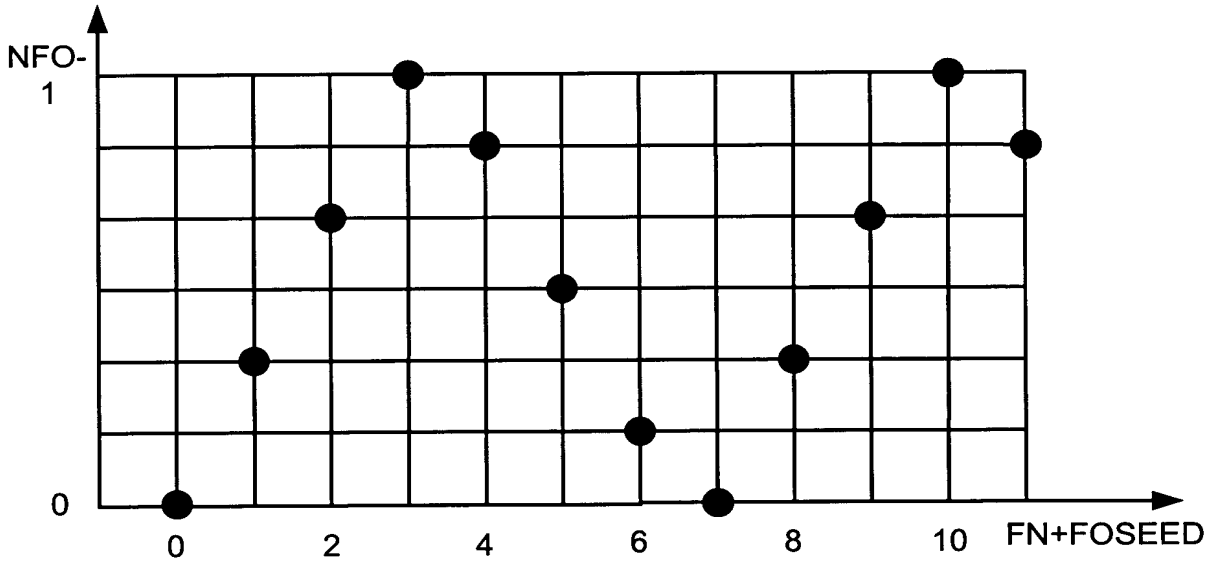


Fig. 6

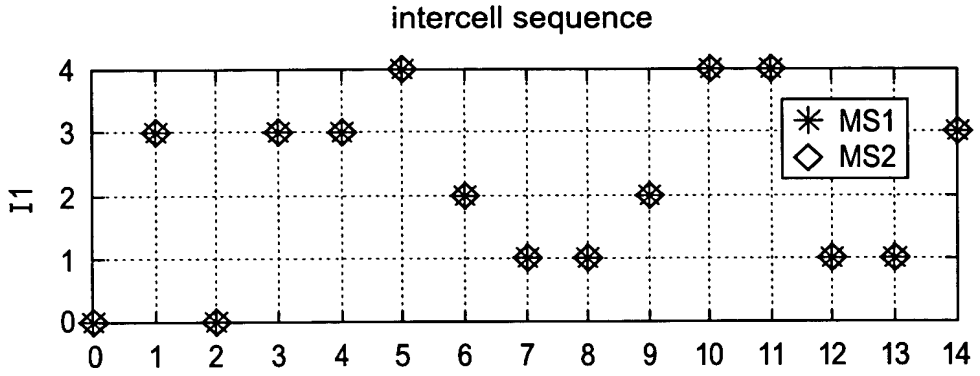


Fig. 7A

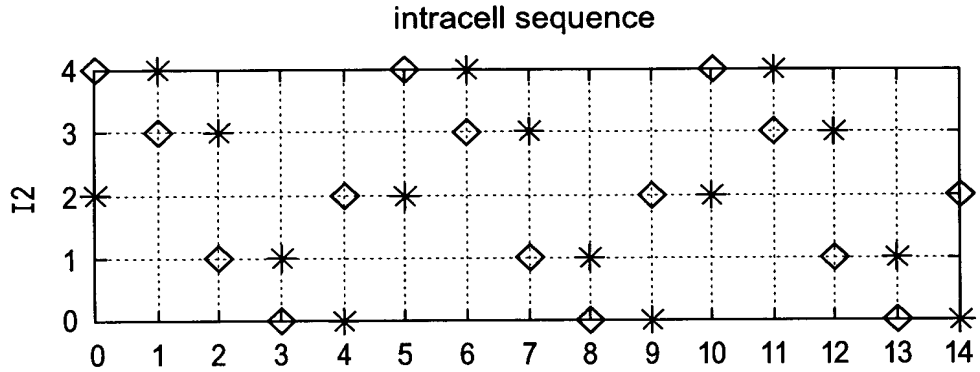


Fig. 7B

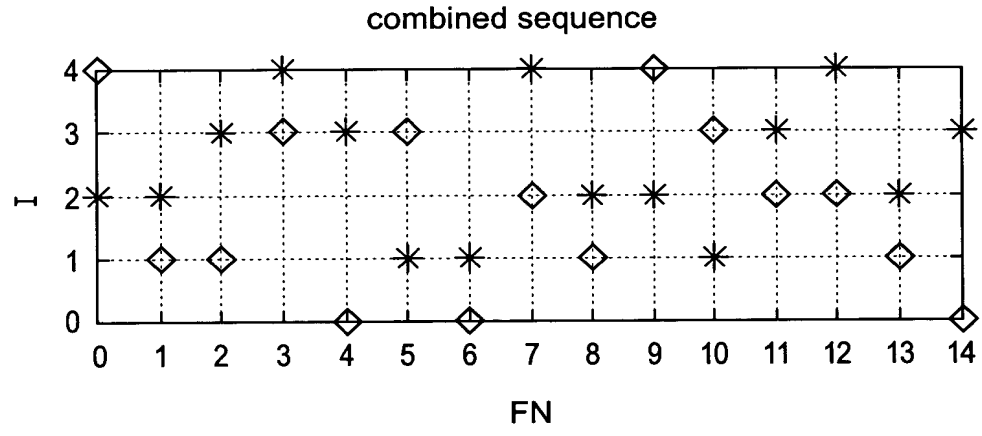


Fig. 7C

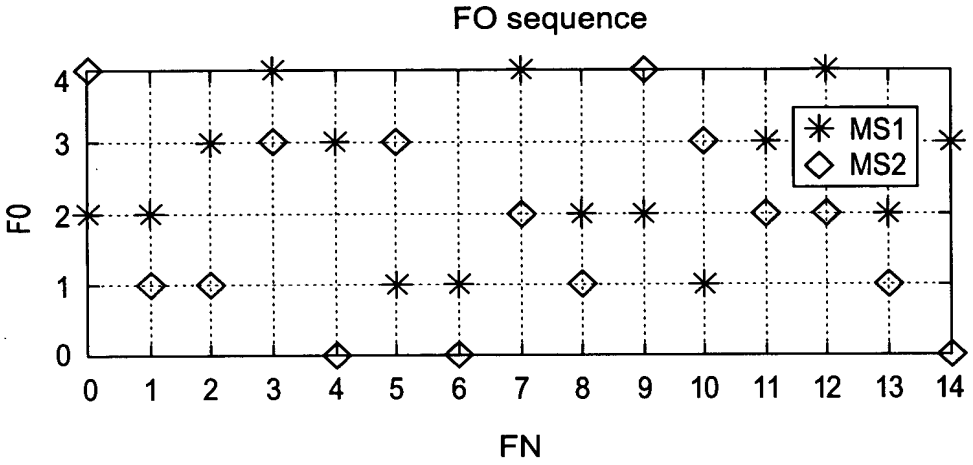

FO sequence
MS1
MS2
F0
FN
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14

Fig. 7D

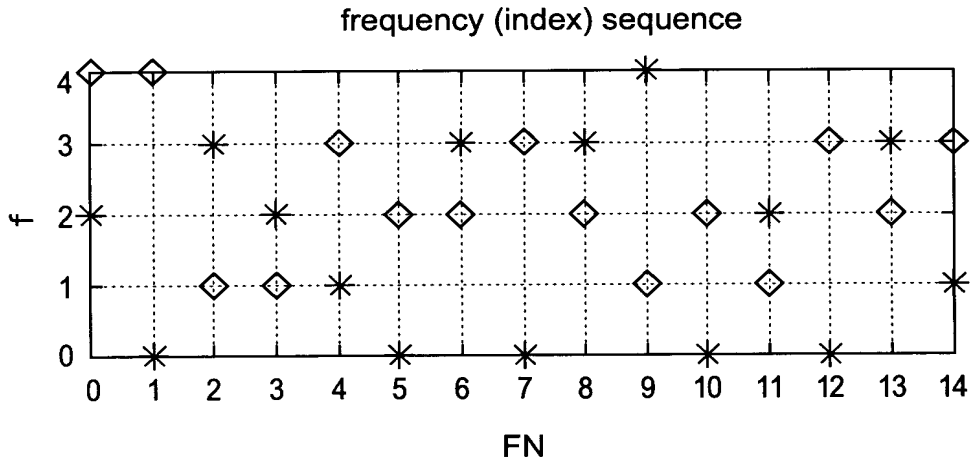

frequency (index) sequence
f
FN
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14

Fig. 7E

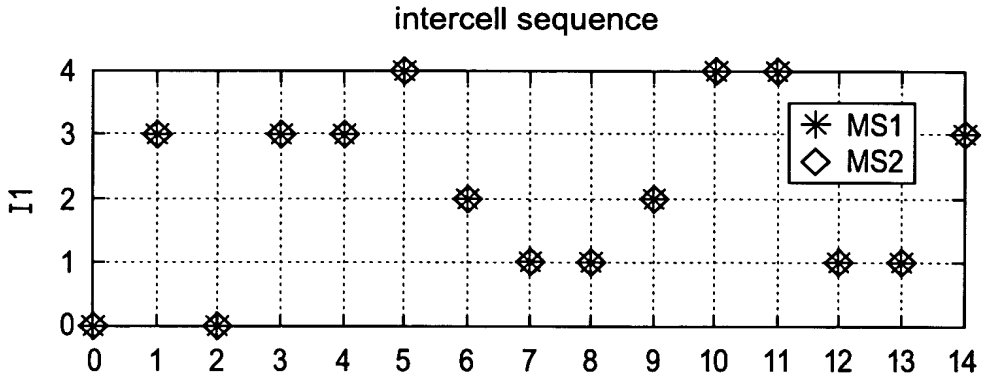


Fig. 8A

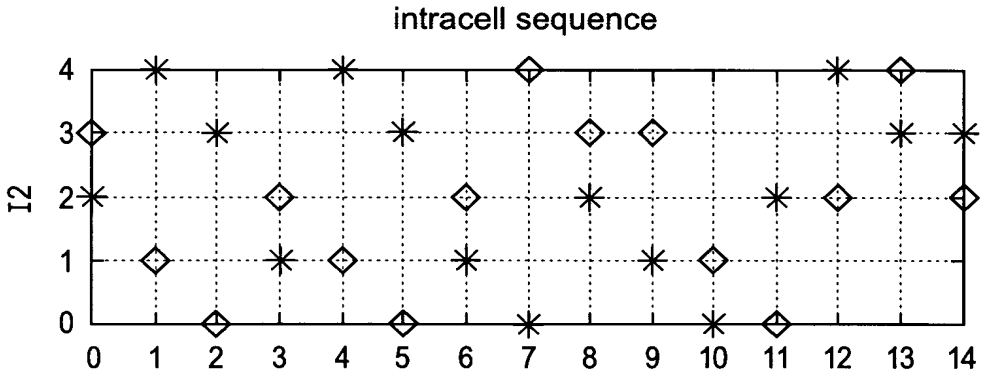


Fig. 8B

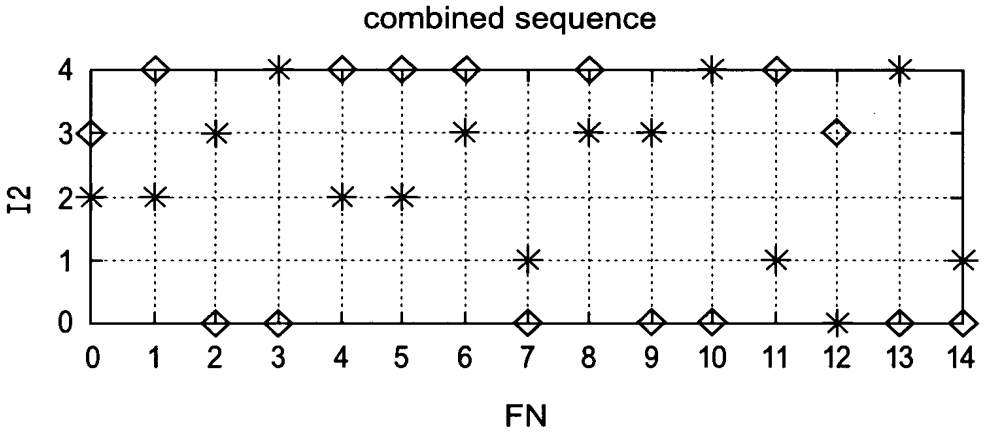


Fig. 8C

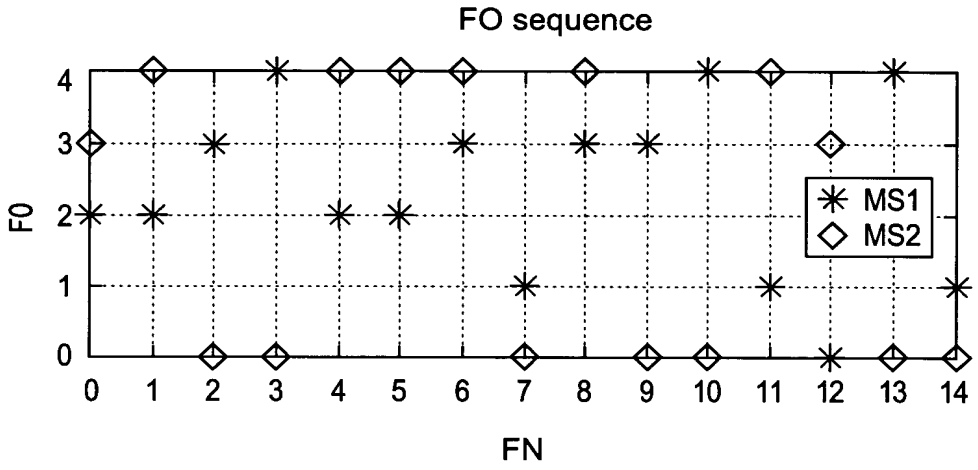

FO sequence
F0
FN
MS1
MS2
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14

Fig. 8D

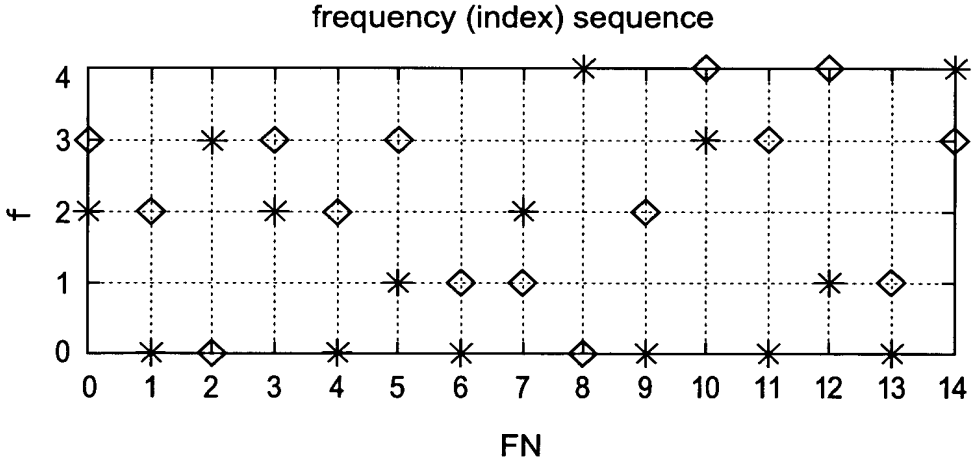

frequency (index) sequence
f
FN
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14

Fig. 8E

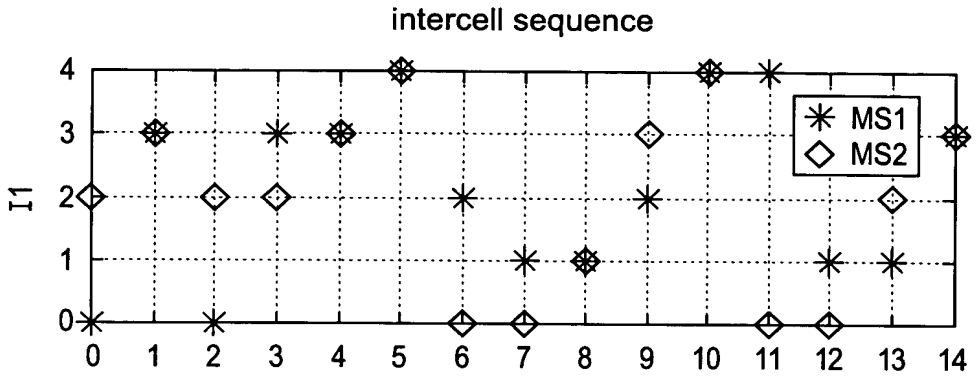


Fig. 9A

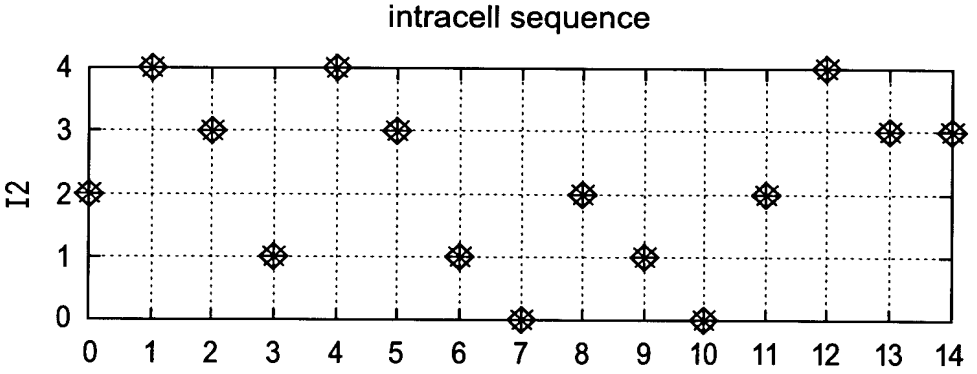


Fig. 9B

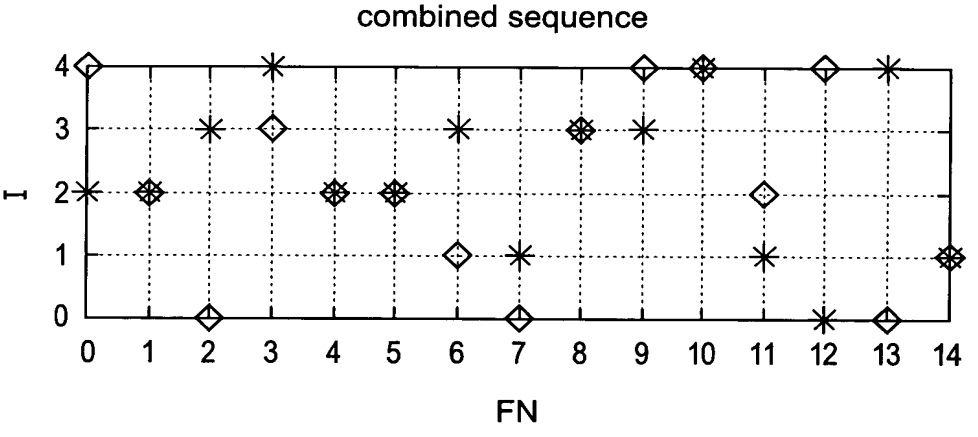


Fig. 9C

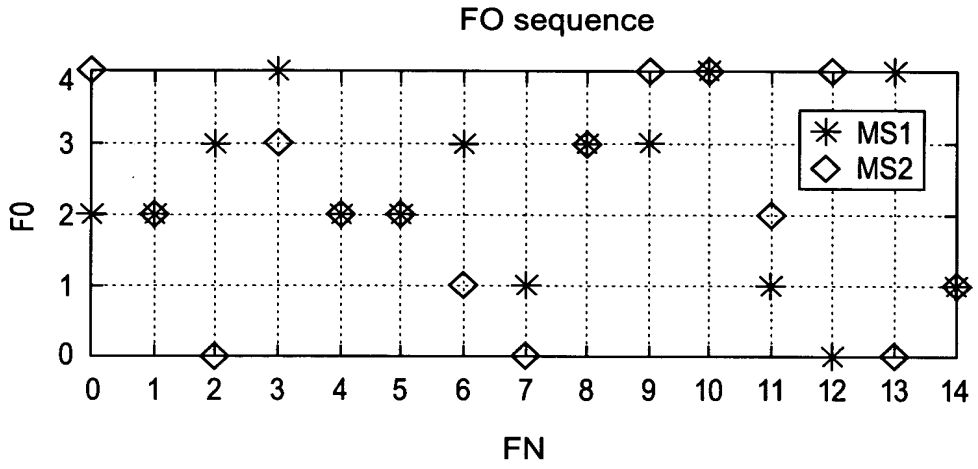

FO sequence
MS1
MS2
F0
FN
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14

Fig. 9D

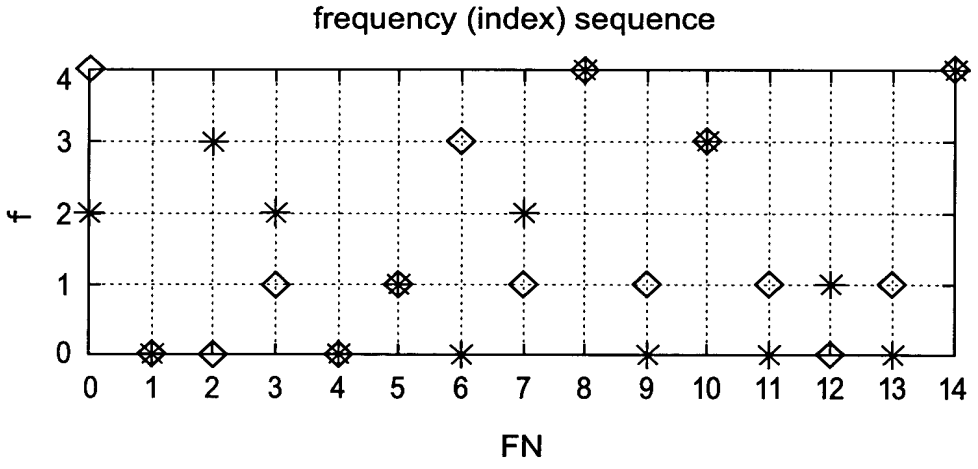
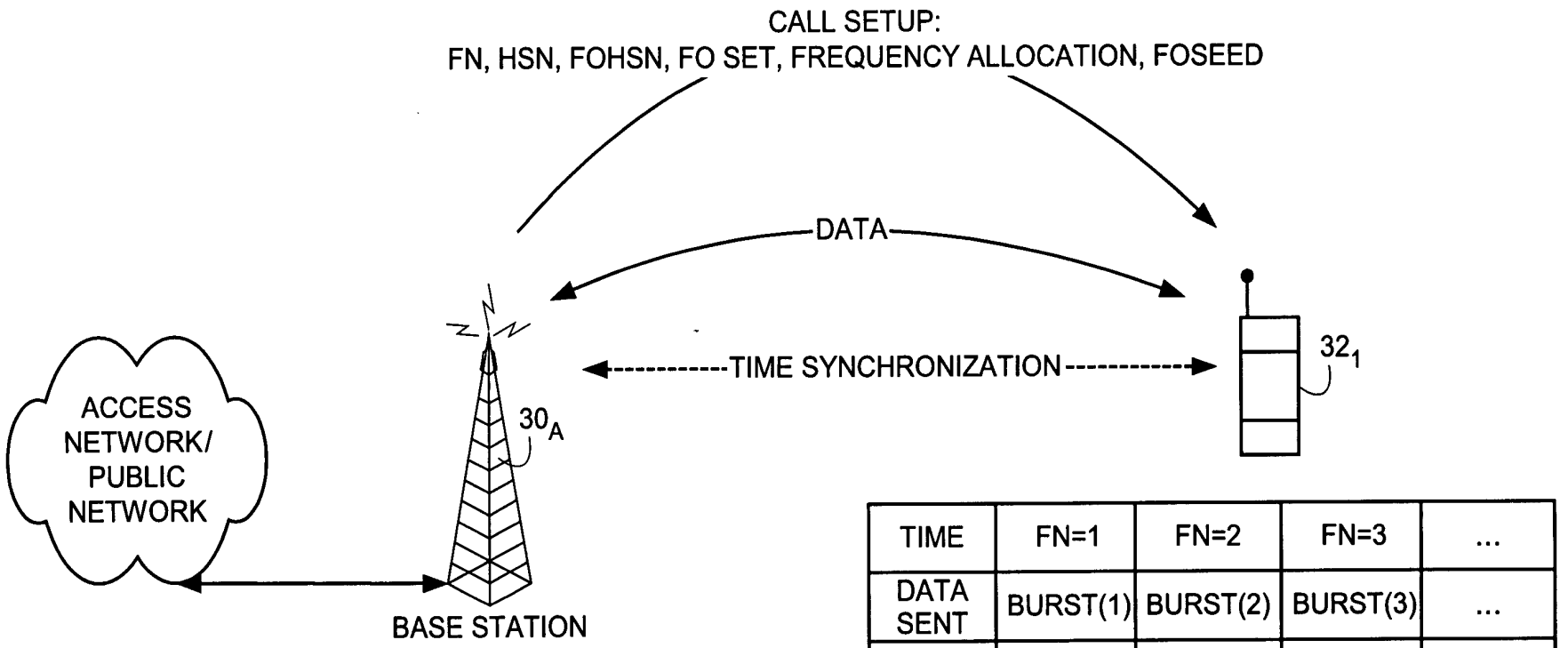

frequency (index) sequence
f
FN
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14

Fig. 9E



TIME	FN=1	FN=2	FN=3	...
DATA RECD	BURST(1)	BURST(2)	BURST(3)	...
FREQ	f(1)	f(2)	f(3)	...

TIME	FN=1	FN=2	FN=3	...
DATA SENT	BURST(1)	BURST(2)	BURST(3)	...
FREQ	f(1)	f(2)	f(3)	...

Fig. 10

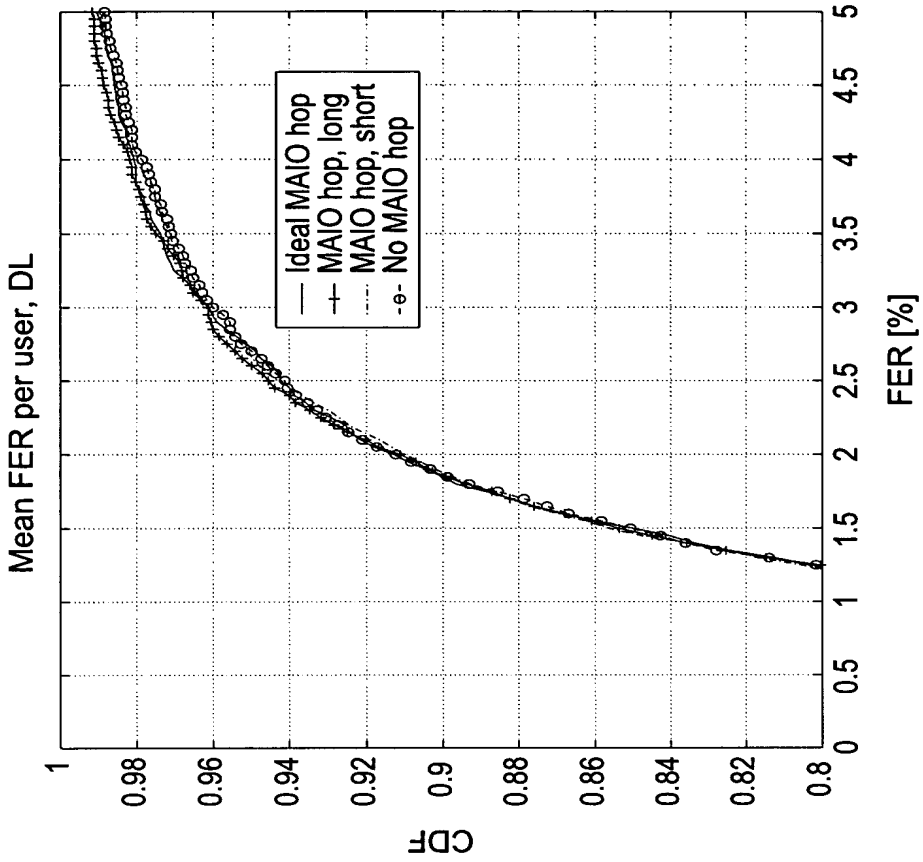


Fig. 11B

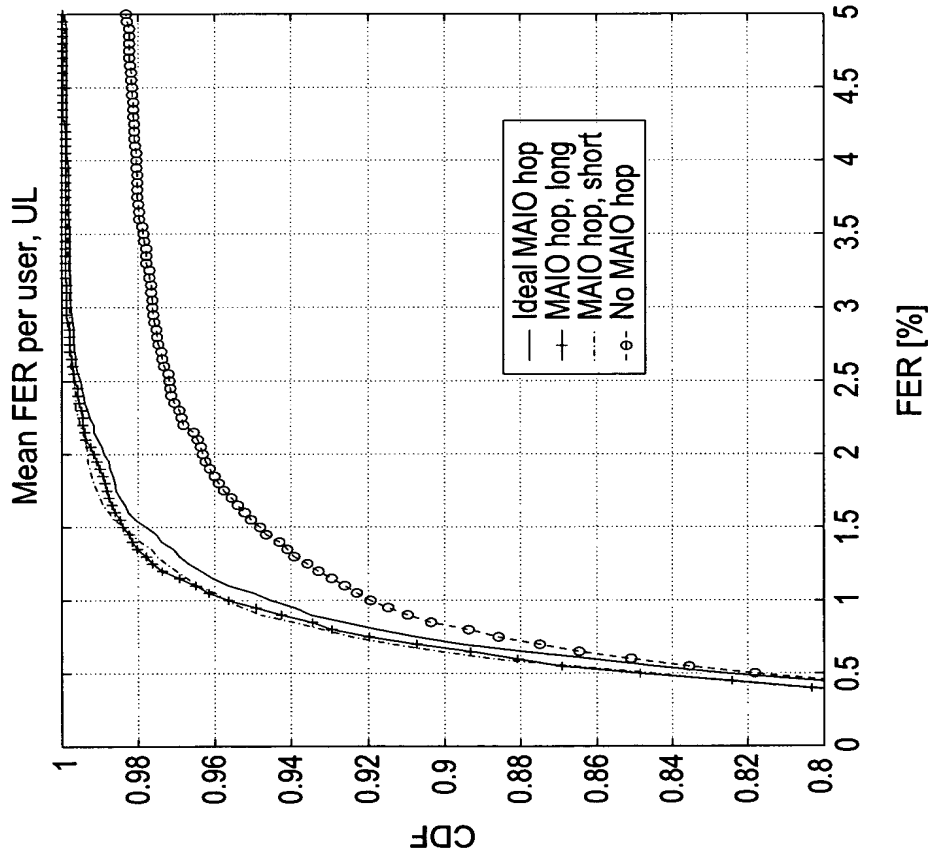


Fig. 11A

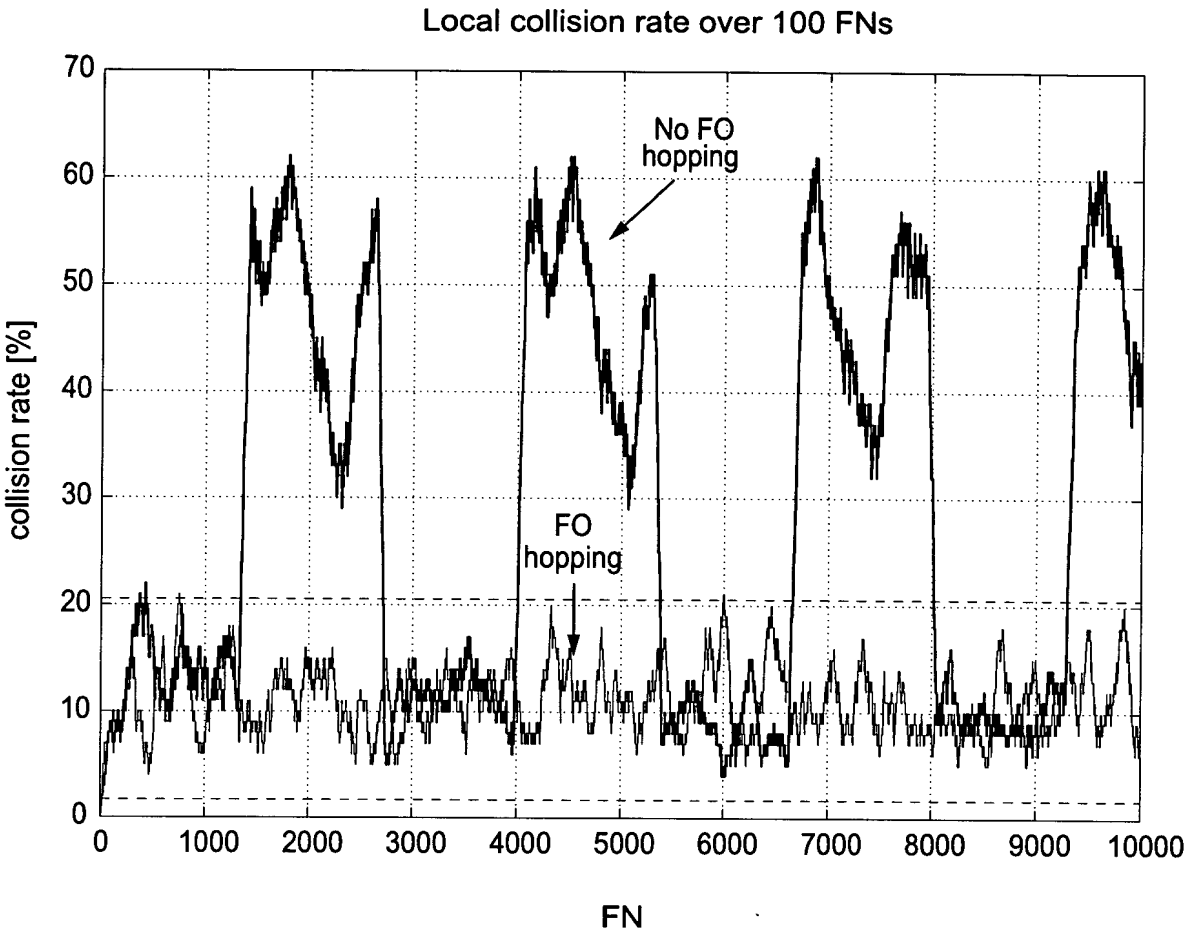

Local collision rate over 100 FNs
collision rate [%]
FN
No FO hopping
FO hopping
0
10
20
30
40
50
60
70
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

Fig. 12

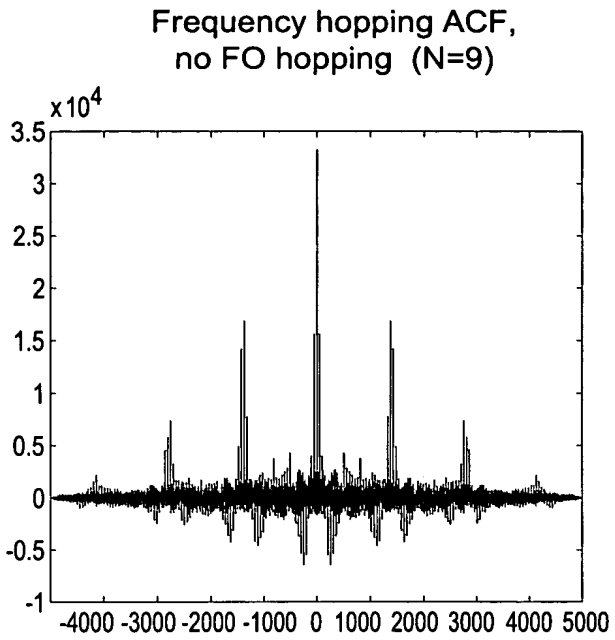


Fig. 13A

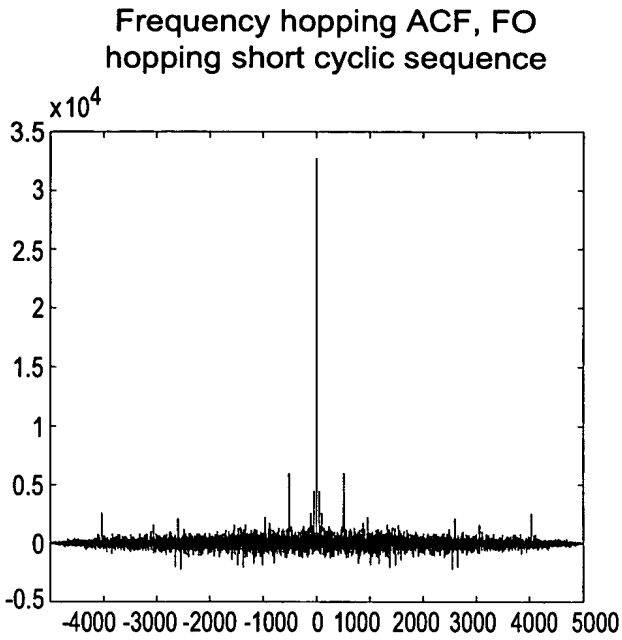


Fig. 13B

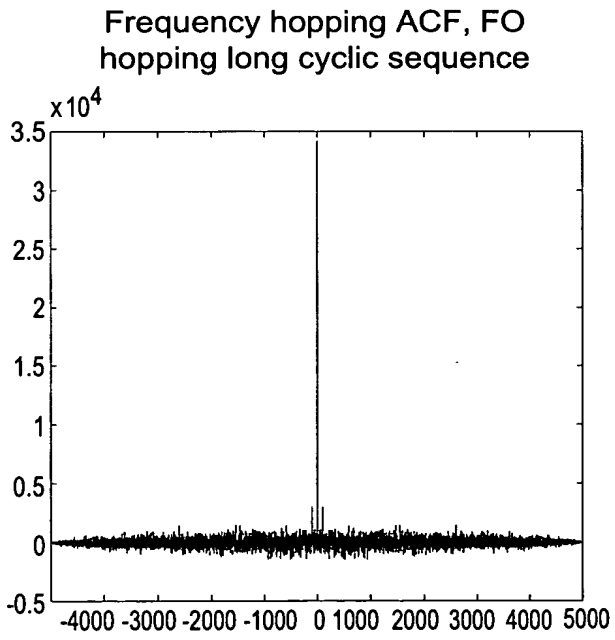


Fig. 13C

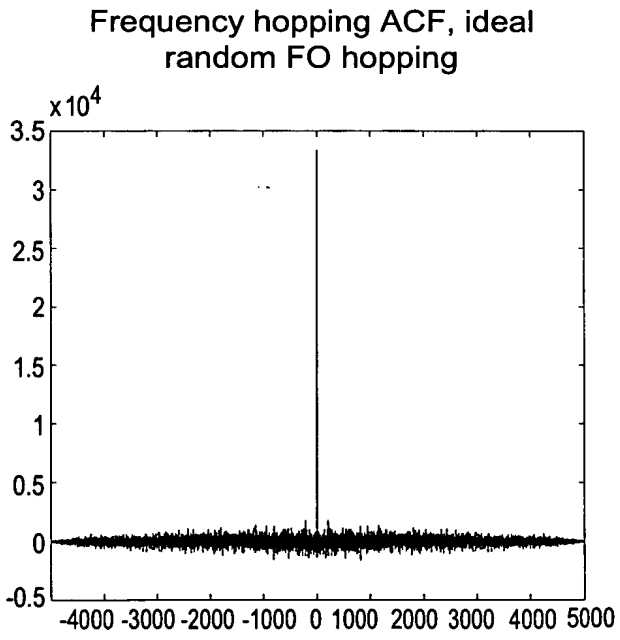


Fig. 13D